

Summary Page for Gas Turbine Steam Generator

Permitted

Operating Schedule:

24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8664 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
G1111	Gas Turbine Steam Generator	Particulate matter	From the stationary gas turbine shall not exceed 3.1 pounds per hour.	Rule 335-3-14
G1111	Gas Turbine Steam Generator	Particulate matter	From the duct burner shall not exceed 0.3 pounds per hour.	Rule 335-3-10-.02 (1), (2)(b) and Rule 335-3-14
G1111	Gas Turbine Steam Generator	Nitrogen oxide	From the stationary gas turbine shall not exceed the more stringent of 37 parts per million by volume at 15 percent oxygen on a dry basis and 57.1 pounds per hour.	Rule 335-3-10-.02 (33) and Rule 335-3-14
G1111	Gas Turbine Steam Generator	Nitrogen oxide	From the duct burner shall not exceed the more stringent of 0.1 pounds per million Btu heat input and 12.8 pounds per hour.	Rule 335-3-10-.02 (1), (2)(b) and Rule 335-3-14
G1111	Gas Turbine Steam Generator	Sulfur dioxide	The natural gas sulfur content shall not exceed 0.8 percent.	Rule 335-3-10-.02 (33)
G1111	Gas Turbine Steam Generator	Carbon monoxide	From the stationary gas turbine shall not exceed 9 pounds per hour.	Rule 335-3-14
G1111	Gas Turbine Steam Generator	Carbon monoxide	From the duct burner shall not exceed 10.2 pounds per hour.	Rule 335-3-14
G1111	Gas Turbine Steam Generator	Volatile organic compounds	From the stationary gas turbine shall not exceed 4 pounds per hour.	Rule 335-3-14
G1111	Gas Turbine Steam Generator	Volatile organic compounds	From the duct burner shall not exceed 5.1 pounds per hour.	Rule 335-3-14
G1111	Gas Turbine Steam Generator	Opacity	Shall not exceed 20 percent with one six-minute period up to 40 percent in any one hour period.	Rule 335-3-4-.01

Gas Turbine Steam Generator Enforceable Provisos	Regulations
<p>1. Applicability</p> <ol style="list-style-type: none"> 1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-. 03, "Major Source Operating Permits". 2. This source is subject to the applicable requirements of Rule 335-3-10-. 02 (1), (2)(b), and (33) and Rule 335-3-14-. 04. 3. This source is subject to the requirements of ADEM Admin. Code 335-3-4-. 01 Visible Emissions. 4. This source is subject to the requirements of ADEM Admin. Code 335-3-8-.25 to .33. <p>2. Emission Standards</p> <ol style="list-style-type: none"> 1. Particulate matter emissions from the stationary gas turbine shall not exceed 3.1 pounds per hour. 2. Particulate matter emissions from the duct burner shall not exceed 0.3 pounds per hour. 3. Nitrogen oxide emissions from the stationary gas turbine shall not exceed the more stringent of 37 parts per million by volume at 15 percent oxygen on a dry basis and 57.1 pounds per hour. 4. Nitrogen oxide emissions from the duct burner shall not exceed the more stringent of 0.1 pounds per million Btu heat input and 12.8 pounds per hour. 5. The natural gas sulfur content shall not exceed 0.8 percent. 6. Carbon monoxide emissions from the stationary gas turbine shall not exceed 9 pounds per hour. 7. Carbon monoxide emissions from the duct burner shall not exceed 10.2 pounds per hour. 8. Volatile organic compound emissions from the stationary gas turbine shall not exceed 4 pounds per hour. 9. Volatile organic compound emissions from the duct burner shall not exceed 5.1 pounds per hour. 10. The stationary gas turbine and the duct burners shall fire only natural gas. 11. Visible emissions shall not be greater than 20% opacity, as determined by six (6) minute averages, except during one six (6) minute period in any sixty (60) minute period, an opacity not greater than that designated as forty percent (40%) may be discharged to the atmosphere. 12. Neither the stationary gas turbine nor the duct burner shall operate more than 8,664 hours per calendar year. <p>3. Compliance an Performance Test Methods and Procedures</p>	<p>Rule 335-3-16-.03</p> <p>Rule 335-3-10-.02 (1), (2)(b) and (33) and Rule 335-3-14-.04</p> <p>Rule 335-3-4-.01</p> <p>Rule 335-3-8-.25 to .33</p> <p>Rule 335-3-14-.04</p> <p>Rule 335-3-10-.02 (1), (2)(b) and Rule 335-3-14</p> <p>Rule 335-3-14-.04</p> <p>Rule 335-3-10-.02 (1), (2)(b) and Rule 335-3-14</p> <p>Rule 335-3-10-.02 (33)</p> <p>Rule 335-3-14-.04</p> <p>Rule 335-3-14-.04</p> <p>Rule 335-3-14-.04</p> <p>Rule 335-3-14-.04</p> <p>Rule 335-3-4-.01</p> <p>Rule 335-3-14-.04</p>

Gas Turbine Steam Generator Enforceable Provisos**Regulations**

1. Compliance with the particulate matter emission limit shall be determined in accordance with the 40 CFR Part 60 Method 5 based on a 3-hour average. Alternate test methods may be used provided prior approval by the Department is granted.	Rule 335-3-14-.02
2. Compliance with the nitrogen oxide emission limit shall be determined in accordance with the NO _x Continuous Emissions Monitoring System.	Rule 335-3-14-.02
3. Compliance with the fuel sulfur content limit shall be determined by monitoring with the following frequency. (1) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source. (2) If the turbine is supplied its fuel without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with paragraph (b) of this section.	Rule 335-3-14-.02
4. Compliance with the carbon monoxide emission limit shall be determined in accordance with the 40 CFR Part 60 Method 10 based on a 3-hour average. Alternate test methods may be used provided prior approval by the Department is granted.	Rule 335-3-14-.02
5. Compliance with the volatile organic compound emission limit shall be determined in accordance with the 40 CFR Part 60 Method 25, 25A or 25B based on a 3-hour average. Alternate test methods may be used provided prior approval by the Department is granted.	Rule 335-3-14-.02
6. Compliance with the opacity limit shall be determined in accordance with the 40 CFR Part 60 Method 9.	Rule 335-3-10-.02 (2)
4. Emission Monitoring	
1. A continuous emission monitoring system (CEMS) to monitor NO _x and CO ₂ shall be installed and operated consistent with the requirements of 40 CFR Part 60 Subpart GG, Section 60.334(b).	Rule 335-3-10-.02 (33)
2. The natural gas sulfur content shall be monitored as required by 40 CFR Part 60 Subpart GG Section 60.334.	Rule 335-3-10-.02 (33)
3. A stationary gas turbine and a duct burner carbon monoxide emission test shall be performed at least once every 5 years.	Rule 335-3-14-.02
4. A stationary gas turbine and a duct burner volatile organic compound emission test shall be performed at least once every 5 years.	Rule 335-3-14-.02
5. For carbon monoxide and volatile organic compound periodic monitoring, if any three-hour block average stationary gas turbine natural gas firing rate is greater than 110 percent of its average value set by the required complying periodic test or a complying test approved by the Department, the feed rate is to be lowered until compliance is successfully demonstrated at the higher rate.	Rule 335-3-16-.05
6. For carbon monoxide and volatile organic compound periodic monitoring, if any three-hour block average duct burner natural gas firing rate is greater than 110 percent of its average value set by the required complying periodic test or a complying test approved by the Department, the feed rate is to be lowered until compliance is successfully demonstrated at the higher rate.	Rule 335-3-16-.05

Gas Turbine Steam Generator Enforceable Provisos	Regulations
7. The stationary gas turbine and the duct burner hours of operation shall be monitored.	Rule 335-3-14-.02
5. Recordkeeping and Reporting Requirements	
1. A stationary gas turbine and a duct burner carbon monoxide emission test report shall be submitted at least once every five years.	Rule 335-3-14-.02
2. A stationary gas turbine and a duct burner volatile organic compound emission test report shall be submitted at least once every five years.	Rule 335-3-14-.02
3. Records of all three-hour block average stationary gas turbine and duct burner natural gas firing rates shall be made and maintained on file available for inspection for at least five years.	Rule 335-3-14-.02
4. Records of the stationary gas turbine and the duct burner hours of operation shall be made and maintained on file available for inspection for at least five years.	Rule 335-3-14-.02
5. The nitrogen oxide budget program recordkeeping and reporting shall be in accordance with Rules 335-3-8-.25 and .32	Rule 335-3-8-.25 and .32
6. A report of excess nitrogen oxide emissions, as defined below, will be submitted to the Department for each calendar quarter within the month following the end of the quarter. The reports will include the following information: <ul style="list-style-type: none"> a. The magnitude of emissions greater than the gas turbine and duct burner emission limits computed on a four hour rolling average (data recorded during periods of monitor breakdowns, repairs, calibration checks and zero and span adjustments shall not be included in the data averages). b. The date and time of commencement and completion of each time period of excess emissions. c. The nature and cause of the excess emissions (if known) and the corrective action taken or preventative measures adopted. d. The date and time identifying each period during which the monitor was inoperative (except for zero and span checks) and the nature of the system repairs or adjustments. e. When no excess emissions have occurred and the monitor was not inoperative or did not require repairs or adjustments, such information will be stated in the report. 	